



## **Carswell/Plant 4**

### **Area of Concern No. 2**

### **RCRA Facility Investigation**

### **at Naval Air Station**

### **Joint Reserve Base, Texas**

**Restoration Advisory Board Executive Summary #8 • February 11, 1999**

## **INTRODUCTION**

Naval Air Station Fort Worth Joint Reserve Base (JRB), formerly Carswell Air Force Base, is in the process of planning and conducting activities for the identification, remediation, and closure of contaminated sites at the Base through the Installation Restoration Program (IRP). The IRP is the Department of Defense's (DoD) primary mechanism for environmental response actions on U.S. Air Force installations. IRP activities are governed by provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and other applicable Federal and state regulations. These activities are being conducted through the combined efforts of the Air Force Center for Environmental Excellence (AFCEE) and the Air Force Base Conversion Agency (AFBCA).

## **AOC 2 BACKGROUND AND DESCRIPTION**

Under provisions of RCRA, the Air Force identified 68 solid waste management units (SWMU) and 16 Areas of Concern (AOC) for further study and cleanup, if needed. One of these is AOC 2. Previous investigations of AOC 2 identified the need for a RCRA Facility Investigation (RFI). An RFI is a more detailed evaluation of the nature

and extent of contamination at a facility.

AOC 2 includes all areas on the east side of the runway where trichloroethylene (TCE) is detected in shallow groundwater. TCE contamination at NAS Fort Worth JRB is demonstrated in three "lobes" of contamination, in the northern, central, and southern portions of the Base. Groundwater in these areas may include other contaminants related to fuel products, such as benzene, toluene, ethylbenzene, and xylene (also known as BTEX compounds). The AOC 2 RFI was focused specifically on the northern lobe of contamination; the nature, extent, and sources for the central and southern lobes already had been addressed by other studies.

## **AOC 2 RFI OBJECTIVES AND ACTIVITIES**

The primary objectives of the AOC 2 RFI were as follows.

1. Identification of potential sources of TCE contamination in the northern lobe.
2. Delineation of shallow groundwater flow patterns in the northern lobe to evaluate whether the contaminated groundwater could reach the Trinity River or the deeper Paluxy Aquifer.

3. Performance of a fate and transport assessment to help determine the on-site and/or off-site sources responsible for the present contaminant distribution within the AOC 2 study area. This assessment included an evaluation of the extent to which natural degradation of contaminants may be occurring within the AOC 2 northern lobe contaminant plume.
4. Performance of a risk characterization to evaluate the risk posed to human health and the environment by the constituents encountered in soils and groundwater that define the northern lobe of AOC 2.

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### **For More Information:**

*If you would like more information about the RCRA Facility Investigation for Area of Concern 2, contact Joseph Dunkle, HQ AFCEE, at (210) 536-5290 or via e-mail at Joe.Dunkle@HQAFCEE.brooks.af.mil.*

To accomplish these objectives, a field investigation was designed to collect the specific data required, and the assessments described above were performed using this new data as well as existing data from other relevant investigations. The field investigation included the following:

- Seismic reflection survey
- Direct push cone penetrometer testing and groundwater sampling (62 locations)
- Thirteen soil borings and collection of 19 subsurface soil samples
- Installation of 14 new groundwater monitoring wells at 11 boring locations (At three boring locations, two wells were installed at different depths.)
- Coring of the bedrock at four locations
- Collection and analysis of groundwater samples from 37 monitoring wells
- Slug tests at 20 wells

## **AOC 2 RFI STATUS AND FINDINGS**

The AOC 2 RFI has been completed and a report of the findings prepared. This

AOC 2 RFI Report was submitted to the Texas Natural Resource Conservation Commission (TNRCC) and EPA Region 6 on January 15, 1999. The report describes the following findings:

1. All potential sources of TCE in the northern lobe area were reviewed, and soil samples collected during the AOC 2 RFI as well as from other investigations conducted in the area were evaluated. No significant TCE soil detections were reported in either AOC 2 RFI soil samples or the Sanitary Sewer RFI soil samples across the study area, and it was concluded that there is no evidence to support sources of TCE for the northern lobe other than the Air Force Plant 4 (AFP 4) plume migrating from the flightline area.
2. The data shows that the plume is composed primarily of TCE with some 1,2-DCE, and the plume does not appear to have moved significantly since 1995. The extent of the plume is slightly wider and longer than previously documented, but this is based on new well data and may not necessarily reflect an actual change in plume extent. The

extent of the plume has been confirmed by uncontaminated perimeter wells.

3. Stratigraphic conditions appear to have resulted in delaying the plume's interception with the West Fork Trinity River and preventing migration downward to the Paluxy Aquifer.
4. There is evidence of some biological natural attenuation taking place, but this activity does not appear sufficient to affect plume conditions significantly at a rate faster than the natural downgradient migration demonstrated to-date.
5. The risk assessment shows there are no adverse health effects expected to be associated with currently-affected soils or groundwater.

During review of the RFI Report by the regulatory agencies, monitoring of the downgradient extent of the plume will continue through the Basewide Groundwater Sampling and Analysis Program.